Dr. Kerry D. Cato, CEG — Engineering Geologist & Project Manager
Cato Geoscience, Inc. — (951) 834-2619,kerry@catogeoscience.com

Dr. Cato has 30 years of experience in the engineering geology specialties of water resources projects, rock and soil mechanics, seismicity, and geomorphology. He has performed and managed geologic investigations for geotechincal/civil engineering projects in California, Michigan, many East Coast states, Louisiana, and Texas. His experience on these projects includes independent review, seismic analysis, geologic mapping, borehole logging, trench logging, geophysical investigations, installation of monitoring wells and inclinometers, coordination of field exploration, and project management. He has taught geology and performed contract research at Texas A&M University's Center for Engineering Geosciences. Dr. Cato is an experienced writer and editor having written numerous technical reports and publications for government agencies, private industry, and professional journals. He is currently serving on Consulting Boards for the CA Dept. of Water Resources and the City of Escondido, CA on dam relicensing and/or dam construction.

EDUCATION
Texas A&M University: Ph.D., Geology, 1991
Texas A&M University: M.S., Geology, 1985
Texas Tech University: B.S., Geology, 1982

PROFESSIONAL REGISTRATION
Professional Geologist, California-6883
Certified Engineering Geologist, California- 2153
Professional Geoscientist, Texas-5323

ACTIVE AFFILIATIONS
US Society of Dams, Member
Association of Engineering Geologists, Member
- Webmaster, Southern California Section
- AEG Foundation, Board of Directors

Groundwater Resources Association of California
Geological Society of America, Fellow
- Engineering Geology & Hydrogeology Divisions

EMPLOYMENT HISTORY
- **California State University, San Bernardino** .....September 2016 to Present
  (Consulting work not performed through CSUSB is run through Cato Geoscience, Inc.)
- **Cato Geoscience, Inc.** .....July 2003 to Present
- **Earth Consultants International (ECI)** .....December 1999 to June 2003
- **Ebasco Services (Raytheon Infrastructure)** .....May 1990 to December 1999
- **Texas A&M University – Department of Geology** .....May 1985 to May 1990

SELECT PROJECT EXPERIENCE ON DAMS
Wohlford Dam, City of Escondido, CA – Replacement. Member – Board of Independent Consultants. This project began in late 2012. Currently between 60 and 90% design stage, involves meeting with both FERC and CA-DSOD personnel regarding design plans and upcoming construction on this 110-ft high RCC dam. FERC Probable Mode Failure Analysis for construction effect on old dam completed in June 2015. 2012-Present.

Calaveras Dam, San Francisco, CA Public Utilities Commission – Replacement Dam Construction. Serve as on-call member of the Construction Management Team through Terra Engineers, Inc. Responsible for logging rock core on the left abutment investigation and mapping rock quality on the stilling basin slope excavation. Reviewed submittals for rock borrow development. Rock types included Temblor Sandstone and Franciscan mélange and graywacke. Fall 2012 – In Progress.

United Water District – Seismic Stability Analysis of Santa Felicia Dam (Lake Piru) Inlet Tower and Facilities. Team Member along with GEI (prime) and Quest Structures Inc. As part of a FERC requested review, conducted a seismic analysis of site area using Next Generation Attenuation (NGA) equations. Site is located on the hanging wall of a nearby thrust fault. Began 2011 – In Progress.

Department of Water Resources and Federal Energy Regulatory Commission – Part 12 Facility Inspection, San Bernardino and Los Angeles Counties, CA. Member – Board of Independent Consultants.

Conduct Part 12 Review that occurs every 5 years. Review and discussion with DWR Division of Engineering and Division Safety of Dams regarding the following dams: Devils Canyon-2nd Afterbay, Cedar Springs, Quail, Pyramid, and Elderberry. Began 2010 – In Progress.

Crafton Hills Reservoir Enlargement, California Department of Water Resources, San Bernardino County, CA. Member – Board of Independent Consultants. Review and discussion with DWR Division of Engineering and Division Safety of Dams regarding design plans and upcoming construction on this 100-ft high embankment dam and approximate 150-acre-ft volume reservoir. Co-authored two Board of Consultants reports. This dam is presently under construction. The engineering and geology issues that have been evaluated include: grouting, rock weathering and depth of foundation cutoff, embankment design, reservoir excavation and borrow material, fault activity and seismic design, and instrumentation. Began 2009 – Construction completed 2014 – Reservoir filled 2/2015.

Diamond Valley Lake, Metropolitan Water District of Southern California, Hemet, CA. Project Geologist. Dr. Cato was on site during the entire 4-½ year construction period (June 1995 to December 1999), as a member of the post-design services Design Team, and was in charge of geologic mapping at the East and West Dams. The geologic maps became the basis for foundation treatment, analysis of grouting results, and serve as an "As Built" record of the dam foundations. Mapping efforts also focused on characterizing the shears that occurred in the dam foundations. Considerable attention was focused on determining the spatial characteristics of the shears because they acted as groundwater barriers and in some cases influenced grout takes. The weathering of joints, shears, and dikes at the East Dam had a major effect on excavation characteristics and was a major reason for use of the central cutoff wall at this dam. Mapping of the excavation walls in alluvium was significant at the West Dam to assure that a devitrified volcanic ash was removed from the floor of the foundation. Completed December 1999.

Par Pond Dam, Westinghouse Savannah River Laboratory, Aiken, SC – Directed drilling and sampling program to support a seismic stability study of Par Pond Dam. Supervised three drilling rigs, a cone penetrometer rig, and a geotechnical engineering subcontractor to characterize the embankment conditions and underlying foundation geology. Obtained undisturbed piston samples of materials so they could be tested for liquefaction susceptibility. Required expertise with standard penetration test (SPT), rotary, auger, and cone penetrometer sampling methods and inclinometer installation. Completed 1994.

Remediation of Reservoir Cracks at the Ludington Pumped Storage Facility, Consumers Power Company and Detroit Edison Company, Ludington, MI – Team member of study to determine cause of crack formation in reservoir bottom and the most appropriate remediation method for the site conditions. This was a FERC monitored investigation and mitigation program. During overwater drilling investigation used mud-rotary, hollow-stem augers, standard penetration test drilling methods, and installed vibrating wire piezometers to determine the geologic and geotechnical characteristics of the reservoir foundation. Wrote report sections on construction history, clay liner performance, and differential subsidence in the reservoir bottom. During reservoir bottom repair, supervised hard-hat divers, electronic navigation operators, and the placement of trench fill material. Completed 1995.

OTHER PERTINENT INFORMATION: PhD Dissertation at Texas A&M, 1991, "*Performance of Geologic Materials Under Hydraulic Stress*" (at spillways). Research funded by both USACE and USDA-NRCS to determine geologic factors that influenced rock erosion at emergency spillways at dams. Led to following reports:

- Mathewson, C., May, J., and CATO, K., 1997, *Prediction, Control, And Repair Of Erosion In Emergency Spillway Channels*: U.S. Army Corps of Engineers, Waterways Experiment Station, Technical Report REMR-GT-5, 53 p.
- Cameron, C.P., McAneny, C.C., CATO, K.D., and May J.H., 1988, *Geotechnical Aspects of Rock Erosion in Emergency Spillway Channels, Volume 2-Research Findings*: US Army Corps of Engineers, Waterways Experiment Station, Technical Report REMR-GT-3, 150 p.